Notice of Allowability	Application No.	Applicant(s)	
	09/840,922	COOPER, JEREMY S.	
	Examiner	Art Unit	
	Baoquoc N. To	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *11/03/2005*.

2. ☒ The allowed claim(s) is/are *2,5-12,16,19-26,28,31 and 36-39*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *11/08/2005* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

JEAN M. CORRIELUS
PRIMARY EXAMINER

DETAILED ACTION

1. Claims 2, 4-12, 16, 18-26, 28, 30-31 and 36-39 are pending in this application.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Timothy A. Doyle, Reg. No. 51,262 on 11/04/2005.

Please amend these claims as follow:

4. (Canceled)

5. (Currently Amended) The method of claim 4 36, wherein step (b) further comprises calculating respective latitudes and longitudes of at least first, second, and third corners of the smallest square search area, wherein the latitude range extends between the latitudes of the first and the second corners of the smallest square search area and the longitude range extends between the longitudes of the second and the third corners of the smallest square search area.

7. (Currently Amended) The method of claim 4 36, wherein step (b) further comprises the steps of:

calculating an angular width of the smallest square search area, the angular width being subtended by at least the width of the smallest square search area; and

calculating an angular height of the smallest square search area, the angular height being subtended by at least the height of the smallest square search area.

11. (Currently Amended) The method of claim 4 36, wherein step (b) further comprises calculating the circular and the smallest square search areas using a non-planar geometry.

12. (Currently Amended) The method of claim 4 36, wherein step (b) further comprises calculating the circular and the smallest square search areas using a planar geometry.

18. (Canceled)

19. (Currently Amended) The system of claim ~~18~~ 38, wherein the proximity searcher is adapted to compare respective latitudes and longitudes of at least first, second, and third corners of the smallest square search area, wherein the latitude range extends between the latitudes of the first and the second corners of the smallest square search area and the longitude range extends between the longitudes of the second and the third corners of the smallest square search area.

21. (Currently Amended) The system of claim ~~18~~ 38, wherein the proximity searcher is adapted to

calculate an angular width of the smallest square search area, the angular width being subtended by at least the width of the smallest square search area, and

calculate an angular height of the smallest square search area, the angular height being subtended by at least the height of the smallest square search area.

25. (Currently Amended) The system of claim ~~18~~ 38, wherein the proximity searcher is adapted to calculate the circular and the smallest square search areas using a non-planar geometry.

26. (Currently Amended) The system of claim ~~18~~ 38, wherein the proximity searcher is adapted to calculate the circular and the smallest square search areas using a planar geometry.

30. (Canceled)

31. (Currently Amended) The computer program product of claim ~~30~~ 39, wherein the second computer program code means includes computer readable program code for causing the processor to calculate respective latitudes and longitudes of at least first, second, and third corners of the smallest square search area, wherein the latitude range extends between the latitudes of the first and the second corners of the smallest square search area and the longitude range extends between the longitudes of the second and the third corners of the smallest square search area.

36. (Currently Amended) A method of performing a proximity search, comprising the steps of:

(a) receiving a search radius defining a circular search area centered around a predetermined position;

(b) calculating a set of latitudes and longitudes to define a smallest square search area into which the circular search area can fit based on the search radius, wherein the smallest square search area covers a latitude range and a longitude range corresponding respectively to a height and a width of the smallest square search area, the height and the width corresponding to a distance equal to at least twice the search radius; and

(c) comparing the set of latitudes and longitudes to position information in a plurality of records stored in a database to determine which of the position

information in the plurality of records is within the smallest square search area, wherein the position information in the plurality of records includes a latitude and a longitude associated with a position.

37. (Currently Amended) A method of performing a proximity search, comprising the steps of:

(a) receiving a search radius defining a circular search area centered around a predetermined position;

(b) mapping the circular search area to a smallest square search area into which the circular search area can fit based on the search radius and being defined in terms of a set of latitudes and longitudes, wherein the smallest square search area covers a latitude range and a longitude range corresponding respectively to a height and a width of the smallest square search area, the height and the width corresponding to a distance equal to at least twice the search radius; and

(c) comparing the set of latitudes and longitudes to position information in a plurality of records stored in a database to determine which of the plurality of records include the position information within the smallest square search area, wherein the position information in the plurality of records includes a latitude and a longitude associated with a position.

38. (Currently Amended) A system for performing a proximity search, comprising:

a database including a plurality of records for storing ~~position information~~ position information, wherein the position information in the plurality of records includes a latitude and a longitude associated with a position; and

a proximity searcher that receives a search radius defining a circular search area centered around a predetermined position,

calculates a set of latitudes and longitudes to define a smallest square search area into which the circular search area can fit based on the search radius, wherein the smallest square search area covers a latitude range and a longitude range corresponding respectively to a height and a width of the smallest square search area, the height and the width corresponding to a distance equal to at least twice the search radius, and

compares the set of latitudes and longitudes to the position information in the plurality of records stored in the database to determine which of the position information in the plurality of records is within the smallest square search area.

39. (Currently Amended) A computer program product comprising computer usable media having computer readable program code means embodied in the media for causing application programs to execute on a computer processor to perform a proximity search, the computer readable program code means comprising:

a first computer readable program code means for causing the processor to receive a search radius defining a circular search area centered around a predetermined position;

a second computer readable program code means for causing the processor to calculate a set of latitudes and longitudes to define a smallest square search area into which the circular search area can fit based on the search radius, wherein the smallest square search area covers a latitude range and a longitude range corresponding respectively to a height and a width of the smallest square search

area, the height and the width corresponding to a distance equal to at least twice the search radius; and

a third computer readable program code means for causing the processor to compare the set of latitudes and longitudes to position information in a plurality of records stored in a database to determine which of the position information in the plurality of records is within the smallest square search area, wherein the position information in the plurality of records includes a latitude and a longitude associated with a position.

to determine which of the position information in the plurality of records is within the smallest square search area.

Allowable Subject Matter

3. Claims 2, 5-12, 16, 19-26, 28, 31 and 36-39 are allowed.

The following is an examiner's statement of reasons for allowance:

As to claim 36, none of the prior art alone or in combination either suggest or teach "(a) receiving a search radius defining a circular search area centered around a predetermined position; (b) calculating a set of latitudes and longitudes to define a smallest square search area into which the circular search area can fit based on the search radius, wherein the smallest square search area covers a latitude range and a longitude range corresponding respectively to a height and a width of the smallest square search area, the height and the width corresponding to a distance equal to at least twice the search radius; and (c) comparing the set of latitudes and longitudes to position information in a plurality of records stored in a database to determine which

of the position information in the plurality of records is within the smallest square search area, wherein the position information in the plurality of records includes a latitude and a longitude associated with a position.

Claims 2, 5-10, 12 and 36 are depended on claim 36; therefore, they are allowed under the same reason as to claim 36.

Claim 37 is similar to the scope of the claim 36; therefore, claim 37 is allowed under the same reason as to claim 36.

Claim 38 is the system employing the method of claim 36; therefore, claim 38 is allowed under the same reason as to claim 36.

Claims 16 and 19-26 are depended on claim 38; therefore, they are allowed under the same reason as to claim 38.

Claim 39 is the computer program product to perform the method recited in claim 36; therefore, claim 39 is allowed under the same reason as to claim 36.

Claims 28 and 31 are depended on claim 39; therefore, they are allowed under the same reason as to claim 39.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent and US. Publication

Mills	(US. Patent No. 6,397,219 B2)	Date: 05/28/2002.
Horita et al.	(US. Patent No. 6,657,558 B2)	Date: 12/02/2003.
Elliot et al.	(Pub. No. US. 2002/0156779 A1)	Date: 10/24/2002.

NPL

Sanad et al. Mobile cellular/GPS/satellite antenas with both single -band and dual-band, Antenas and Propagation Society International Symposim, July 16-20 2000.

Nagy et al. Geogaphic Data Processing. ACM Computing Surveys. 1979, page 139-181.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is at 571-272-4041 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at 571-272-4107.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

(571) –273-8300 [Official Communication]

BQ To

November 8, 2005

JEAN M. CORNELUS
PRIMARY EXAMINER